

Customer No.: 31561  
Application No.: 10/708,198  
Docket No.: 10767-US-PA

### REMARKS

#### Present Status of the Application

Applicant hereby thanks the Examiner for the courtesy extended to acceptance of the drawings received on August 1, 2007.

The Examiner has disagreed on the Applicant's arguments concerning the species deemed mutually exclusive by the Examiner, asserting that the P-type TFT cannot possibly simultaneously also be the N-type TFT and therefore the TFTs are considered constituting mutually exclusive switch types/species. A reply including cancellation of the non-elected (withdrawn) claim 8 or any other appropriate action under 37 C.F.R. 1.144 is required.

In addition, claim 6 is objected to because of certain informalities. Claims 10 and 13 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant considers as the invention.

As for the prior rejections, claims 1 and 10-14 stay rejected under 35 U.S.C. 102(b) as being anticipated by Yumoto (WO/2001/006484 A relying upon U.S. Pat. No. 6,859,193 B1 as an English translation; hereinafter "Yumoto"). Further, claims 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yumoto.

In response thereto, Applicant has amended claim 1 by incorporating the subject matter of claim 6 thereinto, and claim 6 has accordingly been canceled, rendering the

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objection to claim 6 moot. Moreover, the term "about" recited in claims 10 and 13 has been amended to "substantially equal to" in order to render claims 10 and 13 more definite and specific. Claims 7, 9 and 12 have also been amended to patently define the present invention over the prior art of record and claims 16-17 have been added for further defining the present invention cited in claims 1. The proposed amendments are submitted to introduce no new matter.

After entry of the proposed amendments, the prior art rejections stated hereinbefore should be traversed for at least the following reasons. Reconsideration of the application and claims is most earnestly requested.

**Discussion of Office Action Rejections under 35 U.S.C. 102**

*Claims 1 and 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yumoto.* Applicant respectfully traverses the rejection addressed to claims 1 and 10-14 for at least the reasons set forth below.

In order to properly anticipate Applicant's claimed invention under 35 U.S.C 102, each and every element of claim in issue must be found, "either expressly or inherently described, in a single prior art reference". "The identical invention must be shown in as complete details as is contained in the .... claim. *Richardson v. Suzuki Motor Co.*, 868 F. 2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." See M.P.E.P. 2131, 8th ed., 2001.

With respect to claim 1, as currently amended, it recites,

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"A driving circuit of a current-driven active matrix organic light emitting diode (AMOLED), comprising:

an AMOLED pixel connected to a current source, the current source being used to charge/discharge a capacitor connected to a gate of a driving thin film transistor, and a gray scale of the AMOLED pixel is determined by a magnitude of a current provided by the current source; and

a pre-charge switch connected to the gate of the driving thin film transistor and a driving power source, for controlling the driving power source to pre-charge the capacitor

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first switch 610, a second switch 620, and a third switch 630, whereas Yumoto neither explicitly teaches nor implicitly suggests said features which have been encompassed into claim 1 upon entry of the proposed amendments. As such, claim 1 of the present invention and claims 10-11, 15 and 16 depending thereupon should be novel and patentable over Yumoto. Withdrawal of the 102 rejections of claims 1 and 10-11 are accordingly requested.

In rejecting Applicant's claim 12, the Examiner has contended that Yumoto discloses in FIG. 24 a driving power source Vdd for charging/discharging a capacitor C, Cd connected to a gate of a driving thin film transistor TFT2 of the AMOLED pixel. However, as shown in FIG. 24 of Yumoto, the two capacitors C and Cd are individual elements and are not directly connected to each other in parallel. The two capacitors C and Cd disclosed by Yumoto are disposed in different locations, and the capacitor Cd is not coupled to the thin film transistor TFT2. By contrast, the capacitor 660 depicted in FIG. 6 of the present invention is a single element coupled to the gate of the driving thin film transistor 650 of the AMOLED pixel. Accordingly, the capacitors C and Cd taught by Yumoto are not equivalent to the capacitor 660 claimed in Applicant's claim 12.

Moreover, in FIG. 24 of Yumoto, the capacitor Cd is pre-charged at first, and the charged capacitor Cd is coupled to the capacitor C for raising a bias voltage of the capacitor C when the transistors TFT3 and TFT4 are turned on. The driving power source Vdd taught by Yumoto is not able to directly charge the capacitor C as indicated in FIG. 24 of Yumoto. In contradistinction, the capacitor 660 depicted in FIG. 6 of the instant

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application is directly pre-charged through the pre-charge switch by using the driving power source. It is thus submitted that Yumoto fails to teach or disclose at least the technical feature "directly pre-charging the capacitor through the pre-charge switch by using the driving power source" claimed in the amended claim 12.

In light of the foregoing, the capacitors C and Cd taught by Yumoto do not read on the capacitor 660 claimed in Applicant's claim 12, and the feature "directly pre-charging the capacitor through the pre-charge switch by using the driving power source" claimed in the amended claim 12 has never been taught by Yumoto. Hence, the independent claim 12 is believed to be novel and allowable over Yumoto, and so are the claims 13-14 depending upon the allowable claim 12 of the present invention. Withdrawal of the 102 rejections of claims 12-14 is respectfully requested.

**Discussion of Office Action Rejections under 35 U.S.C. 103**

*Claims 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yumoto.* Applicant hereby otherwise traverses the rejections for at least the reasons provided hereinafter.

Applicant respectfully submits the obviousness rejection based on Yumoto is improper as the Yumoto reference fails to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

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The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. M.P.E.P. 2143.03.

Additionally, Applicant submits that dependent claims inherit all of the limitations of the parent claim and any intervening claims, and that a claim dependent upon an allowable claim is also allowable.

Since the subject matter of claim 6 has been incorporated into Applicant's claim 1, Applicant hereby submits that claim 1 is non-obvious and patentable over the teachings of Yumoto for at least the following reasons.

Compared with FIG. 24 of Yumoto, the first switch 610, the second switch 620, and the third switch 630 illustrated in FIG. 6 of the present invention are not disclosed in FIG. 24 of Yumoto. Specifically, as provided in paragraph [0033] of Applicant's specification, "one end of the first switch 610 is connected to the anode of the OLED 640, and another end of the first switch 610 is connected to the drain of the driving thin film transistor 650." Hence, Yumoto's thin film transistor TFT2 purportedly equivalent to Applicant's first switch 610 should actually be corresponding to the driving thin film transistor 650 of the present invention. Referring to the amended claim 1 of the instant application, the first switch 610 is coupled between the anode of the OLED 640 and a drain of the driving thin film transistor 650, and thereby the timing of driving the OLED 640 is determined. After the capacitor 660 is completely charged, the first switch 610 is then turned on, such that the OLED 640 is illuminated. Said feature has neither been taught nor been suggested by Yumoto.

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Moreover, as indicated in the amended claim 1 of the present invention, the second switch 620 is coupled between the current source and the drain of the driving thin film transistor 650 and is controlled by the signal  $V_{s2}$  as depicted in FIG. 7 of the instant application. Accordingly, the second switch 620 is not equivalent to the thin film transistor TFT1 as asserted by the Examiner, for the second switch 620 of the present invention is not coupled to the gate of the driving thin film transistor 650. The second switch 620 and the third switch 630 are employed for controlling the timing of charging the capacitor 660 by the driving power source  $V_t$  and the current source. The detailed timing diagram of control signals of the switches are provided in FIGs. 5 and 7 of the instant application.

Besides, as claimed in the amended claim 1 at issue, the second switch 620 is coupled between the current source and the drain of the driving thin film transistor 650, while the third switch 630 is coupled between the drain of the driving thin film transistor 650 and the gate of the driving thin film transistor 650 and one end of the capacitor 660. The other end of the capacitor 660 is connected to a positive power source. Thereby, after the capacitor 660 is completely charged and discharged, the second and the third switches 620 and 630 are turned off for preventing current leakage of the capacitor 660. Said circuit layout has neither been taught nor been suggested by FIG. 24 of Yumoto. Instead, the capacitor  $C_d$  depicted in FIG. 24 of Yumoto is directly coupled to the data line DATA, and current leakage is not suppressed by the layout of Yumoto's circuit.

Furthermore, the pixel circuit illustrated in FIG. 24 of Yumoto includes the thin

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film transistors TFT3 and TFT4 controlled by the first scanning line SCAN-A and the second scanning line SCAN-B for receiving scan signals, and both the capacitor Cd and the capacitor C are required by the pixel circuit shown in FIG. 24 of Yumoto. Nevertheless, the timing of driving the OLED 640 proposed in the present invention is directly controlled by the first switch 610, the second switch 620, the third switch 630, and the pre-charge switch 670. Besides, only the capacitor C is required by the pixel circuit of the present invention. Accordingly, the pixel circuit, the elements thereof, and the driving time sequence taught by Yumoto are all different from those disclosed by the present invention. As such, it is respectfully submitted that Yumoto fails to teach or suggest each and every element of the instant invention in such a manner as to perform as the claimed invention performs, and it would have not been obvious to one having ordinary skill in the art to have applied Yumoto's teachings to the present invention. Claim 1 is accordingly non-obvious and patentable over Yumoto.

Since dependent claims 7, 9, 15 and 16 inherit all of the limitations of the parent claim 1, the claims 7, 9, 15 and 16 dependent upon the allowable claim 1 are also allowable as a matter of law. Withdrawal of the 103 rejections is thus courteously requested.

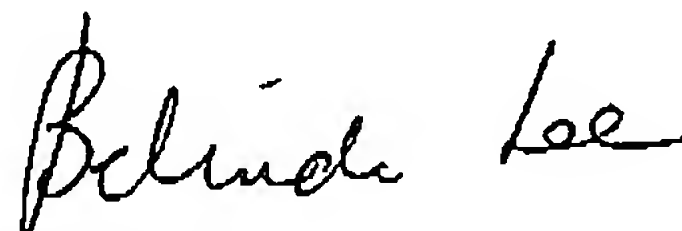
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### CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 1, 7, and 9-14 are in proper condition for allowance and an action to such effect is earnestly solicited. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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Respectfully submitted,



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